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 **JP3216606A2: METHOD FOR FIXING OPTICAL PARTS BY LASER WELDING**
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Country: JP Japan

Kind:

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Applicant(s): HITACHI LTD
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Issued/Filed Dates: Sept. 24, 1991 / Jan. 22, 1990

Application Number: JP1990000010636

IPC Class: G02B 6/42; H01S 3/18

Abstract:

Purpose: To lessen the misregistration which arises at the time of welding and fixing by irradiating the thin notched parts provided in the outer peripheral part of a fiber holder with a laser from the direction perpendicular to a joint surface to tack weld this part, then subjecting the entire circumference of the outer peripheral part of the fiber holder to regular welding.

Constitution: The fiber holder 8 inserted with an optical fiber 6 fixed to a ferrule 7 is pressed to a container 5 adjusted and fixed with optical parts, such as optical semiconductor element (semiconductor laser) 1, coupling optical system 3, lens holder 4 and stem 2 for installing these parts. The position of the fiber holder 8 is so adjusted as to have high optical coupling efficiency. The thin notched parts 9a to 9d provided in the outer peripheral part of the fiber holder 8 are thereafter irradiated with the laser and are thereby tack welded. The entire circumference in the outer peripheral part of the fiber holder 8 is then fixed by regular welding. The misregistration arising at the time of fixing the fiber holder by the laser welding is lessened in this way and the degradation in the optical coupling efficiency between the optical semiconductor element (semiconductor laser) and the optical fiber is prevented.

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Other Abstract Info: DERABS C91-322251 DERC91-322251

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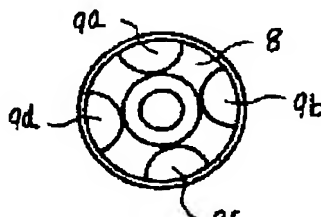
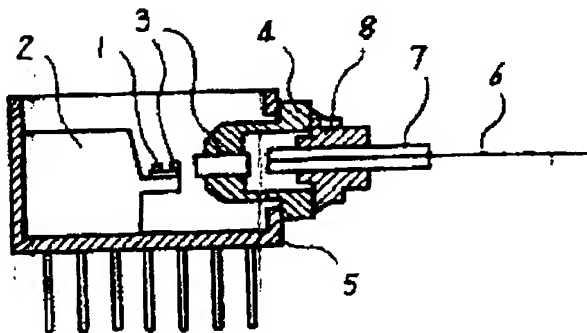
(74) Representative:

**(54) METHOD FOR FIXING
OPTICAL PARTS BY
LASER WELDING**

(57) Abstract:

PURPOSE: To lessen the misregistration which arises at the time of welding and fixing by irradiating the thin notched parts provided in the outer peripheral part of a fiber holder with a laser from the direction perpendicular to a joint surface to tack weld this part, then subjecting the entire circumference of the outer peripheral part of the fiber holder to regular welding.

CONSTITUTION: The fiber holder inserted with an optical fiber 6 fixed to a ferrule 7 is pressed to a container 5 adjusted and fixed with optical parts, such as optical semiconductor element (semiconductor laser) 1, coupling optical system 3, lens holder 4 and stem 2 for installing these parts. The position of the fiber holder 8 is so adjusted as to have high optical coupling efficiency. The thin notched



coupling efficiency. The thin notched parts 9a to 9d provided in the outer peripheral part of the fiber holder 8 are thereafter irradiated with the laser and are thereby tack welded. The entire circumference in the outer peripheral part of the fiber holder 8 is then fixed by regular welding. The misregistration arising at the time of fixing the fiber holder by the laser welding is lessened in this way and the degradation in the optical coupling efficiency between the optical semiconductor element (semiconductor laser) and the optical fiber is prevented.

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